



| ID | Overloaded Facility | Worst Contingency | Category | Category Description | Loading (%) | | | | | | | | Potential Mitigation Solutions |
|---------|----------------------------------|---|----------|-----------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|---|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-T-1 | CRZY HRS-NTVD SW2 115 kV #1 Line | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Circuit Breaker | 146.57 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | Nativdad Distribution Sub Interconnection Project reconductoring Crazy horse-Salinas 115 kV Line sections |
| CC-T-2 | CRZY HRS-NTVD SW1 115 kV #1 Line | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Circuit Breaker | 146.57 | N/A | N/A | <100 | N/A | N/A | 81.73 | N/A | Nativdad Distribution Sub Interconnection Project reconductoring Crazy horse-Salinas 115 kV Line sections |
| CC-T-3 | PRNDL J1-MOSLND D 115 kV #1 Line | P2-4:A19:2:_Moss Landing 115 kV CB 110 | P2 | Circuit Breaker | <100 | 103.65 | 108.18 | <100 | <100 | <100 | <100 | <100 | Mitigation under review |
| CC-T-4 | PRNDL J2-MOSLND D 115 kV #1 Line | P2-4:A19:3:_MOSS LANDING 115 kV CB 120 | P2 | Circuit Breaker | <100 | <100 | 104.27 | <100 | <100 | <100 | <100 | <100 | Mitigation under review |
| CC-T-5 | MOSLND D 115/230 kV #2 Bank | P2-4:A19:2:_Moss Landing 115 kV CB 110 | P2 | Circuit Breaker | <100 | 101.77 | 104.05 | <100 | <100 | <100 | <100 | <100 | Moss Landing Bank upgrade still needed |
| CC-T-6 | B.VSTA J-FIRESTNE 60 kV #1 Line | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Open-Line w/ No Fault | 142.59 | 142.18 | 148.74 | <100 | <100 | <100 | <100 | <100 | Mitigation under review |
| CC-T-7 | FIRESTNE-SPNCE J2 60 kV #1 Line | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Open-Line w/ No Fault | 142.31 | 141.85 | 148.15 | <100 | <100 | <100 | <100 | <100 | Mitigation under review |
| CC-T-8 | SPNCE J1-SPENCE 60 kV #1 Line | P2-1:A19:52:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Open-Line w/ No Fault | 190.15 | 189.35 | 197.55 | <100 | <100 | <100 | <100 | <100 | Mitigation under review |
| CC-T-9 | SPNCE J2-SPENCE 60 kV #1 Line | P2-1:A19:52:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Open-Line w/ No Fault | 151.29 | 150.79 | 157.50 | <100 | <100 | <100 | <100 | <100 | Mitigation under review |
| CC-T-10 | COBURN J-KING CTY 60 kV #1 Line | P2-1:A19:83:_ORCHRD J-COBURN #1 60 kV | P2-1 | Open-Line w/ No Fault | 154.08 | 153.33 | 155.96 | <100 | <100 | <100 | <100 | <100 | Mitigation under review |
| CC-T-11 | SPNCE J1-SNBRN JT 60 kV #1 Line | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Open-Line w/ No Fault | 164.77 | 164.08 | 171.19 | <100 | <100 | <100 | <100 | <100 | Mitigation under review |
| CC-T-12 | COBURN 230/60 kV #2 Bank | P1-2:A19:55:_King City-Coburn #1 60 kV and P1-3:A19:11:_Coburn 230/60 kV Transformer #1 | P6 | N-1-1 | <100 | <100 | <100 | 112.44 | 113.52 | 113.35 | 100.80 | <100 | Coburn SPS |
| CC-T-13 | CRZY HRS-NTVD SW2 115 kV #1 Line | P1-2:A19:17:_Moss Landing-Green Valley #1 115 kV and P1-2:A19:19:_Moss Landing-Green Valley #2 115 kV | P6 | N-1-1 | Diverged | <100 | <100 | <100 | <100 | <100 | <100 | <100 | Nativdad Distribution Sub Interconnection Project reconductoring Crazy horse-Salinas 115 kV Line sections |
| CC-T-14 | NTVD SW2-SALINAS 115 kV #1 Line | P1-2:A19:27:_Moss Landing-Salinas #1 115 kV and P1-2:A19:28:_Moss Landing-Salinas #2 115 kV | P6 | N-1-1 | 118.66 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | Nativdad Distribution Sub Interconnection Project reconductoring Crazy horse-Salinas 115 kV Line sections |



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|---------|---------------------------------|--|----------|----------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|---|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-T-15 | MOSLND D 115/230 kV #2 Bank | P1-3:A19:2:_Moss Landing 230/115 kV Transformer #10 and P1-3:A19:3:_Moss Landing 230/115 kV Transformer #8 | P6 | N-1-1 | 104.80 | 108.07 | 110.02 | <100 | 100.93 | <100 | <100 | <100 | Moss Landing Bank upgrade still needed |
| CC-T-16 | MOSLND D 115230 kV #1 Bank | P1-3:A19:2:_Moss Landing 230/115 kV Transformer #10 and P1-3:A19:3:_Moss Landing 230/115 kV Transformer #8 | P6 | N-1-1 | 105.09 | 107.94 | 109.85 | <100 | 100.87 | <100 | <100 | <100 | Moss Landing Bank upgrade still needed |
| CC-T-17 | GREN VLY 60/115 kV #1 Bank | P1-2:A19:17:_Moss Landing-Green Valley #1 115 kV and P1-2:A19:19:_Moss Landing-Green Valley #2 115 kV | P6 | N-1-1 | Diverged | <100 | <100 | Diverged | <100 | <100 | Diverged | <100 | Watsonville 115 kV Voltage Conversion Project |
| CC-T-18 | GRN VLY1-ERTA JCT 60 kV #1 Line | P1-2:A19:17:_Moss Landing-Green Valley #1 115 kV and P1-2:A19:19:_Moss Landing-Green Valley #2 115 kV | P6 | N-1-1 | Diverged | <100 | <100 | Diverged | <100 | <100 | Diverged | <100 | Watsonville 115 kV Voltage Conversion Project |
| CC-T-19 | CIC JCT-ERTA JCT 60 kV #1 Line | P1-2:A19:17:_Moss Landing-Green Valley #1 115 kV and P1-2:A19:19:_Moss Landing-Green Valley #2 115 kV | P6 | N-1-1 | Diverged | <100 | <100 | Diverged | <100 | <100 | Diverged | <100 | Watsonville 115 kV Voltage Conversion Project |
| CC-T-20 | CIC JCT-AGRILINK 60 kV #1 Line | P1-2:A19:17:_Moss Landing-Green Valley #1 115 kV and P1-2:A19:19:_Moss Landing-Green Valley #2 115 kV | P6 | N-1-1 | Diverged | <100 | <100 | Diverged | <100 | <100 | Diverged | <100 | Watsonville 115 kV Voltage Conversion Project |
| CC-T-21 | WTSNVLE-GRANT JT 60 kV #1 Line | P1-2:A19:17:_Moss Landing-Green Valley #1 115 kV and P1-2:A19:19:_Moss Landing-Green Valley #2 115 kV | P6 | N-1-1 | Diverged | <100 | <100 | Diverged | <100 | <100 | Diverged | <100 | Watsonville 115 kV Voltage Conversion Project |
| CC-T-22 | BRIGHTANO-LGNSTAP 60 kV #1 Line | P1-2:A19:17:_Moss Landing-Green Valley #1 115 kV and P1-2:A19:19:_Moss Landing-Green Valley #2 115 kV | P6 | N-1-1 | Diverged | <100 | <100 | Diverged | <100 | <100 | Diverged | <100 | Watsonville 115 kV Voltage Conversion Project |
| CC-T-23 | LGNSTAP-SALINAS2 60 kV #1 Line | P1-2:A19:17:_Moss Landing-Green Valley #1 115 kV and P1-2:A19:19:_Moss Landing-Green Valley #2 115 kV | P6 | N-1-1 | Diverged | <100 | <100 | Diverged | <100 | <100 | Diverged | <100 | Watsonville Voltage Conversion |
| CC-T-24 | SALINAS2-SALINAS1 60 kV #1 Line | P1-2:A19:17:_Moss Landing-Green Valley #1 115 kV and P1-2:A19:19:_Moss Landing-Green Valley #2 115 kV | P6 | N-1-1 | Diverged | <100 | <100 | Diverged | <100 | <100 | <100 | <100 | Watsonville Voltage Conversion |
| CC-T-25 | GREN VLY 60/115 kV #1 Bank | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | Diverged | N/A | N/A | Diverged | N/A | N/A | Diverged | N/A | Watsonville 115 kV Voltage Conversion Project |
| CC-T-26 | GRN VLY1-ERTA JCT 60 kV #1 Line | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | Diverged | N/A | N/A | Diverged | N/A | N/A | Diverged | N/A | Watsonville 115 kV Voltage Conversion Project |
| CC-T-27 | CIC JCT-ERTA JCT 60 kV #1 Line | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | Diverged | N/A | N/A | Diverged | N/A | N/A | Diverged | N/A | Watsonville 115 kV Voltage Conversion Project |
| CC-T-28 | CIC JCT-AGRILINK 60 kV #1 Line | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | Diverged | N/A | N/A | Diverged | N/A | N/A | Diverged | N/A | Watsonville 115 kV Voltage Conversion Project |
| CC-T-29 | WTSNVLE-AGRILINK 60 kV #1 Line | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | Diverged | N/A | N/A | Diverged | N/A | N/A | Diverged | N/A | Watsonville 115 kV Voltage Conversion Project |
| CC-T-30 | WTSNVLE-GRANT JT 60 kV #1 Line | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | Diverged | N/A | N/A | Diverged | N/A | N/A | Diverged | N/A | Watsonville 115 kV Voltage Conversion Project |



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|---------|----------------------------------|--|----------|----------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|---|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-T-31 | BRIGTANO-GRANT JT 60 kV #1 Line | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | Diverged | N/A | N/A | Diverged | N/A | N/A | Diverged | N/A | Watsonville 115 kV Voltage Conversion Project |
| CC-T-32 | BRIGTANO-LGNSTAP 60 kV #1 Line | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | Diverged | N/A | N/A | Diverged | N/A | N/A | Diverged | N/A | Watsonville 115 kV Voltage Conversion Project |
| CC-T-33 | LGNSTAP-SALINAS2 60 kV #1 Line | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | Diverged | <100 | <100 | Diverged | <100 | <100 | Diverged | <100 | Watsonville 115 kV Voltage Conversion Project |
| CC-T-34 | SALINAS2-SALINAS1 60 kV #1 Line | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | Diverged | <100 | <100 | Diverged | <100 | <100 | Diverged | <100 | Watsonville 115 kV Voltage Conversion Project |
| CC-T-35 | GRANT JT-BRIGTANO 115 kV #1 Line | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | | <100 | <100 | <100 | <100 | <100 | <100 | <100 | Watsonville 115 kV Voltage Conversion Project |
| CC-T-36 | CRZY_HRS-NTVD SW2 115 kV #1 Line | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | 135.95 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | Nativdad Distribution Sub Interconnection Project reconductoring Crazy horse-Salinas 115 kV Line sections |
| CC-T-37 | NTVD SW2-SALINAS 115 kV #1 Line | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | 118.66 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | Nativdad Distribution Sub Interconnection Project reconductoring Crazy horse-Salinas 115 kV Line sections |
| CC-T-38 | CRZY_HRS-NTVD SW1 115 kV #1 Line | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | 135.95 | N/A | N/A | <100 | N/A | N/A | <100 | N/A | Nativdad Distribution Sub Interconnection Project reconductoring Crazy horse-Salinas 115 kV Line sections |
| CC-T-39 | NTVD SW1-SALINAS 115 kV #1 Line | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | 118.66 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | Nativdad Distribution Sub Interconnection Project reconductoring Crazy horse-Salinas 115 kV Line sections |

Study Area: **PG&E Central Coast**

Voltage Deviations



| ID | Substation | Worst Contingency | Category | Category Description | Post Cont. Voltage Deviation % | | | | | | | | Potential Mitigation Solutions |
|----------|-----------------|--|----------|----------------------|--------------------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|---|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-VD-1 | AGRILINK 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 17.4 | <5.0 | <5.0 | 18.2 | <5.0 | <5.0 | 12.4 | <5.0 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-VD-2 | BRIGTANO 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 11.9 | <5.0 | <5.0 | 12.4 | <5.0 | <5.0 | 8.3 | <5.0 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-VD-3 | ERTA 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 18.4 | <5.0 | <5.0 | 19.2 | <5.0 | <5.0 | 13.1 | <5.0 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-VD-4 | GRANT RK 60 kV | P1-2:A19:35:_Green Valley-Watsonville 60 kV | P1 | N-1 | 11.2 | <5.0 | <5.0 | 11.7 | <5.0 | <5.0 | 8.0 | <5.0 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-VD-5 | GREN VLY 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 19.0 | N/A | N/A | 19.9 | N/A | N/A | 13.6 | N/A | Action Plan |
| CC-VD-6 | WTSNVLL 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 17.3 | <5.0 | <5.0 | 18.1 | <5.0 | <5.0 | 12.2 | <5.0 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-VD-7 | GREN VLY 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Bus/Circuit Breaker | 18.9 | N/A | N/A | 20.1 | N/A | N/A | 13.6 | N/A | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-VD-8 | ERTA 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Bus/Circuit Breaker | 18.3 | N/A | N/A | 19.4 | N/A | N/A | 13.1 | N/A | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-VD-9 | GRANT RK 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Bus/Circuit Breaker | 12.0 | <5.0 | <5.0 | 12.9 | <5.0 | <5.0 | 8.4 | <5.0 | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-VD-10 | AGRILINK 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Bus/Circuit Breaker | 17.3 | <5.0 | <5.0 | 18.5 | <5.0 | <5.0 | 12.3 | <5.0 | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-VD-11 | BRIGTANO 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Bus/Circuit Breaker | 11.8 | <5.0 | <5.0 | 12.6 | <5.0 | <5.0 | 8.2 | <5.0 | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-VD-12 | WTSNVLL 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Bus/Circuit Breaker | 17.1 | <5.0 | <5.0 | 18.3 | <5.0 | <5.0 | 12.2 | <5.0 | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-VD-13 | CAMPORA 60 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Bus/Circuit Breaker | 7.8 | 8.61 | 9.46 | 5.8 | 5.812 | 5.811 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-14 | CRZY_HRS 115 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Bus/Circuit Breaker | 6.0 | 6.222 | 6.872 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-15 | CSTRVLL 115 kV | P2-4:A19:2:_Moss Landing 115 kV CB 110 | P2 | Bus/Circuit Breaker | 8.3 | 9.479 | 10.532 | 10.5 | 10.968 | 11.609 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-16 | DEL MNTE 115 kV | P2-4:A19:2:_Moss Landing 115 kV CB 110 | P2 | Bus/Circuit Breaker | 6.1 | 7.143 | 8.021 | 7.6 | 8.125 | 8.587 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-17 | DOLAN RD 115 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Bus/Circuit Breaker | 11.2 | 12.729 | 13.725 | 8.4 | 8.932 | 8.961 | 5.7 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-18 | GONZALES 60 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Bus/Circuit Breaker | 7.9 | 8.712 | 9.584 | 5.9 | 5.85 | 5.855 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-19 | HOLLISTR 115 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Bus/Circuit Breaker | 6.1 | 6.349 | 7.03 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-20 | HOLST D 115 kV | P2-4:A19:3:_MOSS LANDING 115 kV CB 120 | P2 | Bus/Circuit Breaker | <5.0 | 5.574 | 6.307 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-21 | NATIVDAD 115 kV | P2-4:A19:3:_MOSS LANDING 115 kV CB 120 | P2 | Bus/Circuit Breaker | <5.0 | 5.595 | 6.291 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-22 | PRUNEDLE 115 kV | P2-4:A19:3:_MOSS LANDING 115 kV CB 120 | P2 | Bus/Circuit Breaker | 5.3 | 6.248 | 6.99 | <5.0 | 5.231 | 5.307 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-23 | SALINAS 115 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Bus/Circuit Breaker | 8.8 | 10.116 | 11 | 6.6 | 6.965 | 6.971 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-24 | SOLEDAD 60 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Bus/Circuit Breaker | 7.7 | 8.557 | 9.401 | 5.8 | 5.787 | 5.787 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |
| CC-VD-25 | SOLEDAD 115 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Bus/Circuit Breaker | 7.7 | 8.547 | 9.389 | 5.8 | 5.783 | 5.783 | <5.0 | <5.0 | Action Plan. Shunt Capacitor |

Study Area: PG&E Central Coast

Voltage Deviations



| ID | Substation | Worst Contingency | Category | Category Description | Post Cont. Voltage Deviation % | | | | | | | | Potential Mitigation Solutions |
|----------|-----------------|---|----------|---------------------------------------|--------------------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|--|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-VD-26 | TEXACO 60 kV | P2-2:A19:12:_Oilfields 60 kV Bus | P2 | Bus/Circuit Breaker | 8.7 | 8.204 | 8.83 | 8.4 | 7.856 | 7.875 | 7.1 | 6.784 | Action Plan. Shunt Capacitor |
| CC-VD-27 | ERTA 60 kV | P2-1:A19:37:_GREN VLY-ERTA JCT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 18.4 | N/A | N/A | 19.3 | N/A | N/A | 13.1 | N/A | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-VD-28 | AGRILINK 60 kV | P2-1:A19:40:_CIC JCT-AGRILINK #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 16.3 | N/A | N/A | 17.0 | N/A | N/A | 11.8 | N/A | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-VD-29 | GRANT RK 60 kV | P2-1:A19:39:_CIC JCT-ERTA JCT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 11.3 | N/A | N/A | 11.8 | N/A | N/A | 8.1 | N/A | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-VD-30 | WTSNVLLE 60 kV | P2-1:A19:40:_CIC JCT-AGRILINK #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 16.2 | N/A | N/A | 16.8 | N/A | N/A | 11.7 | N/A | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-VD-31 | BRIGTANO 60 kV | P2-1:A19:42:_WTSNVLLE-AGRILINK #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 10.9 | N/A | N/A | 11.4 | N/A | N/A | 7.8 | N/A | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-VD-32 | PAUL SWT 115 kV | P2-1:A19:6:_PAUL SWT-M #1 115 kV | P2-1 | Var device/Open ended Line w/No Fault | 5.5 | 6.031 | 7.109 | 6.7 | 6.056 | 6.319 | 1.4 | -1.852 | Action Plan. Paul Sweet Statcom |
| CC-VD-33 | CMP EVRS 115 kV | P2-1:A19:6:_PAUL SWT-M #1 115 kV | P2-1 | Var device/Open ended Line w/No Fault | 5.0 | 5.408 | 6.376 | 6.0 | 5.434 | 5.674 | 1.3 | -1.651 | Action Plan. Paul Sweet Statcom |
| CC-VD-34 | FIRESTNE 60 kV | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 11.6 | 11.73 | 12.382 | 7.8 | 7.688 | 7.848 | 6.2 | 3.191 | Action Plan. Install shunt capacitor |
| CC-VD-35 | FRSHXPRS 60 kV | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 15.0 | 15.034 | 15.833 | 10.1 | 9.982 | 10.208 | 8.1 | 4.223 | Action Plan. Install shunt capacitor |

Study Area: **PG&E Central Coast**

Voltage Deviations



| ID | Substation | Worst Contingency | Category | Category Description | Post Cont. Voltage Deviation % | | | | | | | | Potential Mitigation Solutions |
|----------|-----------------|--|----------|---------------------------------------|--------------------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|--------------------------------------|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-VD-36 | SPENCE 60 kV | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 10.0 | 10.125 | 10.703 | 6.6 | 6.584 | 6.719 | 5.3 | 2.704 | Action Plan. Install shunt capacitor |
| CC-VD-37 | BNA VSTA 60 kV | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 14.8 | 14.828 | 15.619 | 10.0 | 9.825 | 10.049 | 8.0 | 4.15 | Action Plan. Install shunt capacitor |
| CC-VD-38 | CSTRVLE 115 kV | P2-1:A19:22:_MOSLND E-CSTRVLJ1 #1 115 kV | P2-1 | Var device/Open ended Line w/No Fault | 5.7 | 6.02 | 6.502 | 7.5 | 7.594 | 8.087 | 2.9 | 1.721 | Action Plan. Install shunt capacitor |
| CC-VD-39 | TEXACO 60 kV | P2-1:A19:90:_TEXCO J1-OILFLDS #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 9.1 | 8.76 | 9.215 | 9.6 | 8.975 | 9.014 | 7.7 | 6.741 | Action Plan. Install shunt capacitor |
| CC-VD-40 | BRIGTANO 115 kV | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | <5.0 | <5.0 | <5.0 | <5.0 | 7.65 | 6.238 | <5.0 | <5.0 | Monitor voltage deviation |
| CC-VD-41 | CAMPHORA 60 kV | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | <5.0 | 5.443 | 6.021 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | Monitor voltage deviation |
| CC-VD-42 | CMP EVRS 115 kV | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | <5.0 | <5.0 | <5.0 | <5.0 | 9.984 | 7.504 | <5.0 | <5.0 | Monitor voltage deviation |
| CC-VD-43 | GONZALES 60 kV | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | <5.0 | 5.505 | 6.098 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | Monitor voltage deviation |
| CC-VD-44 | GRANT RK 115 kV | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | <5.0 | <5.0 | <5.0 | <5.0 | 7.756 | 6.316 | <5.0 | <5.0 | Monitor voltage deviation |
| CC-VD-45 | NATIVDAD 115 kV | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | N/A | 5.253 | 5.787 | N/A | <5.0 | <5.0 | N/A | <5.0 | Monitor voltage deviation |
| CC-VD-46 | PAUL SWT 115 kV | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | <5.0 | <5.0 | <5.0 | <5.0 | 9.912 | 7.438 | <5.0 | <5.0 | Monitor voltage deviation |
| CC-VD-47 | ROB ROY 115 kV | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | <5.0 | <5.0 | <5.0 | <5.0 | 9.885 | 7.446 | <5.0 | <5.0 | Monitor voltage deviation |
| CC-VD-48 | SALINAS 115 kV | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | 5.7 | 6.943 | 7.562 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | Monitor voltage deviation |
| CC-VD-49 | SOLEDAD 60 kV | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | <5.0 | 5.41 | 5.985 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | Monitor voltage deviation |
| CC-VD-50 | SOLEDAD 115 kV | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | <5.0 | 5.404 | 5.978 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | Monitor voltage deviation |
| CC-VD-51 | WTSNVLE 115 kV | P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines | P7 | DCTL | N/A | <5.0 | <5.0 | N/A | 9.44 | 7.405 | N/A | <5.0 | Monitor voltage deviation |

Study Area: **PG&E Central Coast**

High/Low Voltage



| ID | Substation | Worst Contingency | Category | Category Description | Voltage (PU) | | | | | | | | Potential Mitigation Solutions |
|---------|-----------------|--|----------|----------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|---|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-V-1 | BIG BASN 60 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.0587 | 1.07 | Mitigation under investigation |
| CC-V-2 | BURNS 60 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.0576 | 1.07 | Mitigation under investigation |
| CC-V-3 | COBURN 230 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.05 | Mitigation under investigation |
| CC-V-4 | CRUSHER 60 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.056 | 1.07 | Mitigation under investigation |
| CC-V-5 | CRZY_HRS 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.05 | Mitigation under investigation |
| CC-V-6 | CSTRVLE 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.06 | Mitigation under investigation |
| CC-V-7 | DEL MNTE 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.06 | Mitigation under investigation |
| CC-V-8 | DOLAN RD 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.06 | Mitigation under investigation |
| CC-V-9 | ERTA 60 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | >0.90 | <1.05 | >0.90 | >0.90 | 1.0551 | >0.90 | Mitigation under investigation |
| CC-V-10 | GONZALES 60 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | >0.90 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | Mitigation under investigation |
| CC-V-11 | GREN VLY 60 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | >0.90 | <1.05 | >0.90 | >0.90 | 1.06 | >0.90 | Mitigation under investigation |
| CC-V-12 | HOLLISTR 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.05 | Mitigation under investigation |
| CC-V-13 | HOLST D 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.05 | Mitigation under investigation |
| CC-V-14 | LONE STR 60 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.0567 | 1.07 | Mitigation under investigation |
| CC-V-15 | MOSLND D 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.06 | Mitigation under investigation |
| CC-V-16 | MOSLND E 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.06 | Mitigation under investigation |
| CC-V-17 | NATIVDAD 115 kV | Base Case | P0 | N-0 | >0.90 | <1.05 | <1.05 | >0.90 | <1.05 | <1.05 | >0.90 | 1.05 | Mitigation under investigation |
| CC-V-18 | PRUNEDLE 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.06 | Mitigation under investigation |
| CC-V-19 | SALINAS 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.05 | Mitigation under investigation |
| CC-V-20 | SNBENITO 115 kV | Base Case | P0 | N-0 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | <1.05 | 1.05 | Mitigation under investigation |
| CC-V-21 | AGRILINK 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 0.85 | >0.90 | >0.90 | 0.84 | >0.90 | >0.90 | >0.90 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-22 | BRIGTANO 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 0.88 | >0.90 | >0.90 | 0.88 | >0.90 | >0.90 | >0.90 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-23 | ERTA 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 0.85 | >0.90 | >0.90 | 0.84 | >0.90 | >0.90 | >0.90 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-24 | GRANT RK 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 0.87 | >0.90 | >0.90 | 0.87 | >0.90 | >0.90 | >0.90 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-25 | GREN VLY 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 0.85 | N/A | N/A | 0.84 | N/A | N/A | >0.90 | N/A | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-26 | WTSNVLE 60 kV | P1-3:A19:4:_Green Valley 115/60 Transformer #1 | P1 | N-1 | 0.85 | >0.90 | >0.90 | 0.84 | >0.90 | >0.90 | >0.90 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-27 | AGRILINK 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Cbus/Circuit Breaker | 0.86 | >0.90 | >0.90 | 0.84 | >0.90 | >0.90 | 0.92 | >0.90 | Action Plan. Activate Watsonville UVLS. Watsonville 115 kV Conversion Project |
| CC-V-28 | BRIGTANO 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Cbus/Circuit Breaker | 0.88 | >0.90 | >0.90 | 0.88 | >0.90 | >0.90 | 0.94 | >0.90 | Action Plan. Activate Watsonville UVLS. Watsonville 115 kV Conversion Project |
| CC-V-29 | CAMPHORA 60 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Cbus/Circuit Breaker | 0.90 | 0.88 | 0.8646 | 0.94 | 0.94 | 0.93 | 0.98 | 1.00 | Mitigation under review |
| CC-V-30 | DOLAN RD 115 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Cbus/Circuit Breaker | 0.92 | 0.89 | 0.8762 | 0.95 | 0.94 | 0.94 | 0.98 | 1.01 | Mitigation under review |
| CC-V-31 | ERTA 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Cbus/Circuit Breaker | 0.85 | N/A | N/A | 0.84 | N/A | N/A | 0.92 | N/A | Action Plan. Activate Watsonville UVLS. Watsonville 115 kV Conversion Project |
| CC-V-32 | GONZALES 60 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Cbus/Circuit Breaker | 0.89 | 0.87 | 0.85 | 0.93 | 0.93 | 0.92 | 0.97 | 1.01 | Action Plan. Install Shunt Capacitors |
| CC-V-33 | GRANT RK 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Cbus/Circuit Breaker | 0.87 | >0.90 | >0.90 | 0.87 | >0.90 | >0.90 | 0.93 | >0.90 | Action Plan. Activate Watsonville UVLS. Watsonville 115 kV Conversion Project |
| CC-V-34 | GREN VLY 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Cbus/Circuit Breaker | 0.85 | N/A | N/A | 0.84 | N/A | N/A | 0.92 | N/A | Action Plan. Watsonville 115 kV Conversion Project |
| CC-V-35 | SALINAS 115 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Cbus/Circuit Breaker | 0.92 | 0.897 | 0.879 | 0.95 | 0.942 | 0.938 | 0.98 | 1.01 | Mitigation under review |

Study Area: **PG&E Central Coast**

High/Low Voltage



| ID | Substation | Worst Contingency | Category | Category Description | Voltage (PU) | | | | | | | | Potential Mitigation Solutions |
|---------|----------------|--|----------|---------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|---|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-V-36 | SOLEDAD 115 kV | P2-4:A19:4:_MOSS LANDING 115 kV CB 500 | P2 | Cbus/Circuit Breaker | 0.9124 | 0.8917 | 0.8716 | 0.9461 | 0.9404 | 0.9355 | 0.9808 | 1.01 | Mitigation under review |
| CC-V-37 | WTSNVLLE 60 kV | P2-4:A19:1:_GREEN VALLEY 115 kV CB 102 | P2 | Cbus/Circuit Breaker | 0.8552 | >0.90 | >0.90 | 0.8415 | >0.90 | >0.90 | 0.9248 | >0.90 | Action Plan. Activate Watsonville UVLS. Watsonville 115 kV Conversion Project |
| CC-V-38 | ERTA 60 kV | P2-1:A19:37:_GREN VLY-ERTA JCT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 0.853 | N/A | N/A | 0.8427 | N/A | N/A | >0.9 | N/A | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-V-39 | GRANT RK 60 kV | P2-1:A19:39:_CIC JCT-ERTA JCT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 0.8804 | N/A | N/A | 0.8768 | N/A | N/A | >0.9 | N/A | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-V-40 | AGRILINK 60 kV | P2-1:A19:40:_CIC JCT-AGRILINK #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 0.865 | N/A | N/A | 0.8562 | N/A | N/A | >0.9 | N/A | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-V-41 | WTSNVLLE 60 kV | P2-1:A19:40:_CIC JCT-AGRILINK #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 0.865 | N/A | N/A | 0.8563 | N/A | N/A | >0.9 | N/A | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-V-42 | BRIGTANO 60 kV | P2-1:A19:42:_WTSNVLLE-AGRILINK #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 0.8904 | N/A | N/A | 0.887 | N/A | N/A | >0.9 | N/A | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-V-43 | FIRESTNE 60 kV | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 0.8709 | 0.8748 | 0.8579 | N/A | >0.9 | >0.9 | >0.9 | >0.9 | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-V-44 | FRSHXPRS 60 kV | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 0.8412 | 0.8451 | 0.8269 | >0.9 | >0.9 | 0.8949 | >0.9 | >0.9 | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-V-45 | BNA VSTA 60 kV | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 0.8424 | 0.8463 | 0.8281 | >0.9 | >0.9 | 0.896 | >0.9 | >0.9 | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-V-46 | SPENCE 60 kV | P2-1:A19:45:_SALINAS1-FREXP JT #1 60 kV | P2-1 | Var device/Open ended Line w/No Fault | 0.8867 | 0.8905 | 0.8744 | >0.9 | >0.9 | >0.9 | >0.9 | >0.9 | Action Plan. Watsonville UVLS/Watsonville 115 kV Voltage Conversion Project |
| CC-V-47 | GONZALES 60 kV | P1-1:A19:4:_BAF COG2 13.80 Generator ID 1 and P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 | P3 | L-1/G-1 | >0.90 | >0.90 | 0.8914 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-48 | OILFLDS 60 kV | P1-1:A19:2:_SALNR GN 13.80 Generator ID 1 and P1-2:A19:57:_Coburn-Oil Fields #1 60 kV | P3 | L-1/G-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.90 | Monitor voltage |
| CC-V-49 | SALN RVR 60 kV | P1-1:A19:2:_SALNR GN 13.80 Generator ID 1 and P1-2:A19:57:_Coburn-Oil Fields #1 60 kV | P3 | L-1/G-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.90 | Monitor voltage |

Study Area: **PG&E Central Coast**

High/Low Voltage



| ID | Substation | Worst Contingency | Category | Category Description | Voltage (PU) | | | | | | | | Potential Mitigation Solutions |
|---------|-----------------|---|----------|----------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|--|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-V-50 | SARG CYN 60 kV | P1-1:A19:2: _SALNR GN 13.80 Generator ID 1 and P1-2:A19:57: _Coburn-Oil Fields #1 60 kV | P3 | L-1/G-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.90 | Monitor voltage |
| CC-V-51 | TEXACO 60 kV | P1-1:A19:2: _SALNR GN 13.80 Generator ID 1 and P1-2:A19:57: _Coburn-Oil Fields #1 60 kV | P3 | L-1/G-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.89 | Monitor voltage |
| CC-V-52 | MOSLND D 115 kV | P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 and P1-2:A18:1: _Spring-Moss Landing 230 kV | P6 | N-1-1 | >0.90 | >0.90 | 0.89 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-53 | MOSLND E 115 kV | P1-2:A18:1: _Spring-Moss Landing 230 kV and P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-54 | MOSSLND1 230 kV | P1-2:A18:1: _Spring-Moss Landing 230 kV and P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.88 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-55 | MOSSLND2 230 kV | P1-2:A18:1: _Spring-Moss Landing 230 kV and P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.88 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-56 | GREN VLY 60 kV | P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 and P1-3:A19:4: _Green Valley 115/60 Transformer #1 | P6 | N-1-1 | 0.844 | >0.90 | >0.90 | 0.83 | >0.90 | >0.90 | 0.89 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-57 | ERTA 60 kV | P1-2:A19:21: _Paul Sweet Statcom and P1-3:A19:4: _Green Valley 115/60 Transformer #1 | P6 | N-1-1 | 0.85 | >0.90 | >0.90 | 0.83 | >0.90 | >0.90 | >0.90 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-58 | AGRILINK 60 kV | P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 and P1-3:A19:4: _Green Valley 115/60 Transformer #1 | P6 | N-1-1 | 0.84 | >0.90 | >0.90 | 0.83 | >0.90 | >0.90 | 0.89 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-59 | WTSNVLE 60 kV | P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 and P1-3:A19:4: _Green Valley 115/60 Transformer #1 | P6 | N-1-1 | 0.84 | >0.90 | >0.90 | 0.83 | >0.90 | >0.90 | 0.89 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-60 | GRANT RK 60 kV | P1-2:A19:28: _Moss Landing-Salinas #2 115 kV and P1-3:A19:4: _Green Valley 115/60 Transformer #1 | P6 | N-1-1 | 0.87 | >0.90 | >0.90 | 0.85 | >0.90 | >0.90 | >0.90 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-61 | BRIGTANO 60 kV | P1-2:A19:28: _Moss Landing-Salinas #2 115 kV and P1-3:A19:4: _Green Valley 115/60 Transformer #1 | P6 | N-1-1 | 0.87 | >0.90 | >0.90 | 0.862 | >0.90 | >0.90 | >0.90 | >0.90 | Action Plan. Watsonville 115 kV Voltage Conversion Project |
| CC-V-62 | CRZY_HRS 115 kV | P1-2:A18:1: _Spring-Moss Landing 230 kV and P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.8711 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-63 | HOLLISTR 115 kV | P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 and P1-2:A18:9: _Metcalf-Moss Landing #1 230 kV | P6 | N-1-1 | >0.90 | 0.89 | 0.86 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-64 | HOLST D 115 kV | P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 and P1-2:A18:9: _Metcalf-Moss Landing #1 230 kV | P6 | N-1-1 | >0.90 | 0.89 | 0.86 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-65 | NATIVDAD 115 kV | P1-2:A18:9: _Metcalf-Moss Landing #1 230 kV and P1-3:A19:1: _Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | 0.8995 | 0.8741 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |

Study Area: **PG&E Central Coast**

High/Low Voltage



| ID | Substation | Worst Contingency | Category | Category Description | Voltage (PU) | | | | | | | | Potential Mitigation Solutions |
|---------|-----------------|--|----------|----------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|--------------------------------|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-V-66 | SALINAS 115 kV | P1-2:A18:9:_Metcalf-Moss Landing #1 230 kV and P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | 0.8972 | 0.8717 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-67 | SALINAS2 60 kV | P1-2:A19:38:_Salinas 60 kV Bus Sectionalizing Breaker and P1-3:A19:5:_Salinas 115/60 kV Transformer #2 | P6 | N-1-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.88 | >0.90 | Monitor voltage |
| CC-V-68 | SOLEDAD 115 kV | P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 and P1-2:A18:9:_Metcalf-Moss Landing #1 230 kV | P6 | N-1-1 | >0.90 | 0.87 | 0.84 | >0.90 | 0.89 | 0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-69 | GONZALES 60 kV | P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 and P1-2:A18:9:_Metcalf-Moss Landing #1 230 kV | P6 | N-1-1 | >0.90 | 0.86 | 0.83 | >0.90 | 0.88 | 0.89 | >0.90 | >0.90 | Monitor voltage |
| CC-V-70 | CAMPHORA 60 kV | P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 and P1-2:A18:9:_Metcalf-Moss Landing #1 230 kV | P6 | N-1-1 | >0.90 | 0.87 | 0.85 | >0.90 | 0.89 | 0.89 | >0.90 | >0.90 | Monitor voltage |
| CC-V-71 | CSTRVLE 115 kV | P1-2:A18:1:_Spring-Moss Landing 230 kV and P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.89 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-72 | CMP EVRS 115 kV | P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 and P1-2:A18:1:_Spring-Moss Landing 230 kV | P6 | N-1-1 | >0.90 | >0.90 | 0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-73 | PAUL SWT 115 kV | P1-2:A19:21:_Paul Sweet Statcom and P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-74 | ROB ROY 115 kV | P1-2:A18:1:_Spring-Moss Landing 230 kV and P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.89 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-75 | PRUNEDLE 115 kV | P1-2:A18:1:_Spring-Moss Landing 230 kV and P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.88 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-76 | SNBENITO 115 kV | P1-2:A18:9:_Metcalf-Moss Landing #1 230 kV and P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | 0.8964 | 0.87 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-77 | RSVTN RD 60 kV | P1-2:A19:38:_Salinas 60 kV Bus Sectionalizing Breaker and P1-3:A19:5:_Salinas 115/60 kV Transformer #2 | P6 | N-1-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.87 | >0.90 | Monitor voltage |
| CC-V-78 | GABILAN 60 kV | P1-2:A19:38:_Salinas 60 kV Bus Sectionalizing Breaker and P1-3:A19:5:_Salinas 115/60 kV Transformer #2 | P6 | N-1-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.87 | >0.90 | Monitor voltage |
| CC-V-79 | BORONDA 60 kV | P1-2:A19:38:_Salinas 60 kV Bus Sectionalizing Breaker and P1-3:A19:5:_Salinas 115/60 kV Transformer #2 | P6 | N-1-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.8791 | >0.90 | Monitor voltage |

Study Area: **PG&E Central Coast**

High/Low Voltage



| ID | Substation | Worst Contingency | Category | Category Description | Voltage (PU) | | | | | | | | Potential Mitigation Solutions |
|---------|-----------------|--|----------|----------------------|------------------|------------------|------------------|------------------|------------------|------------------|----------------------|------------------------|--------------------------------|
| | | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-V-80 | DEL MNTE 115 kV | P1-2:A18:9:_Metcalf-Moss Landing #1 230 kV and P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.88 | >0.90 | 0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-81 | DOLAN RD 115 kV | P1-2:A18:1:_Spring-Moss Landing 230 kV and P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-82 | LAURELES 60 kV | P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 and P1-2:A18:1:_Spring-Moss Landing 230 kV | P6 | N-1-1 | >0.90 | >0.90 | 0.89 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-83 | LAURELES 60 kV | P1-3:A19:5:_Salinas 115/60 kV Transformer #2 and P1-2:A19:38:_Salinas 60 kV Bus Sectionalizing Breaker | P6 | N-1-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.86 | >0.90 | Monitor voltage |
| CC-V-84 | OILFLDS 60 kV | P1-2:A19:57:_Coburn-Oil Fields #1 60 kV and P1-1:A19:2:_SALNR GN 13.80 Generator ID 1 | P6 | N-1-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.90 | Monitor voltage |
| CC-V-85 | OTTER 60 kV | P1-2:A18:1:_Spring-Moss Landing 230 kV and P1-3:A19:1:_Moss Landing 500/230 kV Transformer #9 | P6 | N-1-1 | >0.90 | >0.90 | 0.88 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-86 | OTTER 60 kV | P1-2:A19:38:_Salinas 60 kV Bus Sectionalizing Breaker and P1-3:A19:5:_Salinas 115/60 kV Transformer #2 | P6 | N-1-1 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | 0.86 | >0.90 | Monitor voltage |
| CC-V-87 | CAMPHORA 60 kV | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | >0.90 | >0.90 | 0.90 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |
| CC-V-88 | GONZALES 60 kV | P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines | P7 | DCTL | >0.90 | >0.90 | 0.89 | >0.90 | >0.90 | >0.90 | >0.90 | >0.90 | Monitor voltage |

Study Area: **PG&E Central Coast**

Transient Stability



| ID | Contingency | Category | Category Description | Transient Stability Performance | | | | | | | | Potential Mitigation Solutions |
|------------|---------------------------------------|----------|-----------------------------|---|---|---|------------------|------------------|------------------|----------------------|------------------------|--|
| | | | | 2017 Summer Peak | 2020 Summer Peak | 2025 Summer Peak | 2017 Winter Peak | 2020 Winter Peak | 2025 Winter Peak | 2017 Spring Off-Peak | 2020 Summer Light Load | |
| CC-SP-TS-1 | Moss Landing-Coburn 230 kV | P1-2 | Delayed Clearing (Line) | Load Bus Voltage Dip> 30%; Load Bus Voltage Dip 20% for 22 Cycles; Frequency Dip below 59.0 Hz for 6 Cycles | Load Bus Voltage Dip> 30% | Load Bus Voltage Dip> 30% | | | | | | Reassess with actual fault clearing times and SLG fault impedances where applicable. |
| CC-SP-TS-2 | Moss Landing 115 kV Bus Section 1D | P2-2 | Normal Clearing (Bus) | Load Bus Voltage Dip> 30% | Load Bus Voltage Dip> 30% | Load Bus Voltage Dip> 30% | | | | | | Reassess with actual fault clearing times and SLG fault impedances where applicable. |
| CC-SP-TS-3 | Moss Landing 115 kV CB 110 | P2-4 | Stuck breaker (Non bus-tie) | Load Bus Voltage Dip> 30% | Load Bus Voltage Dip> 30% | Load Bus Voltage Dip> 30% | | | | | | Reassess with actual fault clearing times and SLG fault impedances where applicable. |
| CC-SP-TS-4 | DUKMOSS1 18.00 Generator ID 1 and Mos | P3-2 | Normal clearing (N-1/N-1) | Load Bus Voltage Dip> 30%; Load Bus Voltage Dip 20% for 22 Cycles | Load Bus Voltage Dip> 30%; Load Bus Voltage Dip 20% for 22 Cycles | Load Bus Voltage Dip> 30%; Load Bus Voltage Dip 20% for 22 Cycles | | | | | | Reassess with actual fault clearing times and SLG fault impedances where applicable. |

Study Area: **PG&E Central Coast**



Single Contingency Load Drop

| ID | Worst Contingency | Category | Category Description | Amount of Load Drop (MW) | | | | | | | | Potential Mitigation Solutions |
|---------|-------------------|----------|----------------------|--------------------------|----------|----------|----------|----------|----------|----------|----------|--------------------------------|
| | | | | Select.. | Select.. | Select.. | Select.. | Select.. | Select.. | Select.. | Select.. | |
| X-SLD-1 | | | | | | | | | | | | |

No single contingency resulted in total load drop of more than 250 MW.

Study Area: **PG&E Central Coast**



Single Source Substation with more than 100 MW Load

| ID | Substation | Load Served (MW) | | | | | | | | Potential Mitigation Solutions |
|--------|------------|------------------|----------|----------|----------|----------|----------|----------|----------|--------------------------------|
| | | Select.. | Select.. | Select.. | Select.. | Select.. | Select.. | Select.. | Select.. | |
| X-SS-1 | | | | | | | | | | |

No single source substation with more than 100 MW Load